MATH 155 Math: A Way of Thinking
Syllabus and Course Information
Spring 2010

Instructor: Sheldon Lee
Email: shlee@viterbo.edu
Office: MRC 530
Office Hours: M 10 – 12, 1 – 2, T 11 – 12, W 10 – 1, R 10 – 11, 12 – 1, F 10 – 11
Textbook: Using *and Understanding Mathematics: A Quantitative Reasoning Approach* (4th edition), by Bennett and Briggs.
Web site: http://viterbomath.x10hosting.com/M155
Meeting Times
Section 001: MW 2:10 – 3:00, TR 1:00 – 1:50 in MRC 416, Final Exam: Mon 5/10, 9:50 – 11:50AM
Section 002: MW 3:10 – 4:00, TR 2:00 – 2:50 in MRC 416, Final Exam: Wed 5/12, 7:40 – 9:40AM

Catalog Course Description: An investigation of topics including the history of mathematics, number systems, geometry, logic, probability, and statistics. There is an emphasis throughout on problem-solving. Prerequisite: placement score into 110 or grade of C or higher in 001. General education course: G9.

Workload: To do well in this class, you must have enough time to read, study, and do homework - roughly 8 - 12 hours per week outside of class.

Course Content: We will cover the following material from the text:

Chapter 1	Thinking Critically
Chapter 8	Growth: Linear, Exponential, Logarithmic
Chapter 4	Managing Your Money
Chapter 5	Statistical Reasoning
Chapter 6	Putting Statistics to Work
Chapter 7	Probability: Living with the Odds
Chapter 11	Mathematics and the Arts
Chapter 13	Mathematics and Business
Chapter 12	Mathematics and Politics

Technology
A basic scientific calculator will be useful for this course. Calculators will be allowed on some, but not all of the exams.

Grading scale
90% and above - A 80 – 89.9% - B 70 – 79.9% - C 60 – 69.9% - D

Graded item	**Percent of overall grade**
Assignments (homework, labs, in-class activities)	25%
Participation, attendance and board work	10%
Project	10%
3 Midterm exams	35%
Comprehensive Final Exam	20%

Blackboard: I will use this to periodically update your grades, usually after every test. However, you must use the percentages above to approximate your grade.

Assignments (homework, labs) (25%)
Homework will be posted at http://viterbomath.x10hosting.com/M155 and will be collected at the beginning of class. No late homework will be accepted without prior approval. If you cannot be in class you can place your solutions on my desk or email them to me before the time they are due. The lowest two homework scores will be dropped. In addition, there will be one or more labs during the semester that will be weighed more heavily than the homework assignments. These scores cannot be dropped.

Participation, attendance, in-class activities, and board work (10%)
You are expected to attend class on a regular basis, and keep me informed if you cannot attend. Once you have had 4 unexcused absences, every unexcused absence from that point onward will incur a penalty of 5% from the participation grade. You are also expected to work problems in groups when asked, and periodically present solutions on the board to the other groups.

Project (10%)
You are expected to complete one project, working in groups of two. If there is an odd number of students, I may allow a group of three, or allow one person to work individually. You will choose the topic from a list that I will provide, write up a short paper, and give a 15 minute presentation to the other students.

3 Midterm exams: Mon 2/8, Wed 3/3, Thurs 4/8 (35%)
These are pencil and paper tests covering the material we have covered in class since the last test. You have 50 minutes to complete the test. Calculators may or may not be allowed, depending on the test. On each test, you may use one side of a 8.5 × 11″ sheet of notes *without worked out examples*, to be turned in with the test.

Comprehensive Final Exam (20%)

Where to get help
Since this is mathematics, you will probably get stuck often. Do not panic, this is all part of the learning process. You will likely need a support group which may include other students or tutors. The Learning Center has tutors available and is located in MRC 332. Please feel free to stop by my office for help at any time. In addition, I will periodically post hints and solutions to problems on the course web site.

Course Goals and Objectives
Because this course may be taken as part of the General Education requirements, the specific General Education Core Abilities are listed:

(a) Thinking: Students engage in the process of inquiry and problem solving.

(b) Ethical Decision Making: Students respond to ethical issues, using informed value systems. Students understand how academic honesty in mathematics requires deductive reasoning. Students honestly challenge themselves to understand the material. Practice academic honesty in mastering the material for the course on one's own without cheating.

(c) Communication: Students speak and write to suit varied purposes, audiences, disciplines, and contexts. Students communicate solutions to problems in writing on assignments, quizzes, and exams, using appropriate mathematical language and format. Students read text and reference materials, and use calculators to solve problems and communicate solutions.

Americans with Disabilities Act: If you have a disability and require auxiliary aids, services, or accommodations for this class, please inform me and Jane Eddy, the disabilities (ADA) coordinator (MRC 332; 796-3194) within 10 days to discuss your needs for the semester.

Useful Dates: Last day to drop: 3/19, Last day to withdraw: 4/6

Tentative schedule – subject to change

Week	Date	Topic Covered
1	M 1/18	1A Recognizing Fallacies
	T 1/19	1B Propositions and Truth Values
	W 1/20	
	R 1/21	1C Sets and Venn Diagrams
2	M 1/25	
	T 1/26	1D Analyzing Arguments
	W 1/27	1E Critical Thinking in Everyday Life
	R 1/28	8A Growth: Linear versus Exponential
3	M 2/1	8B Doubling Time and Half-Life
	T 2/2	8D Logarithmic Scales
	W 2/3	
	R 2/4	
4	M 2/8	**Test 1**
	T 2/9	4A Taking Control of Your Finances
	W 2/10	4B The Power of Compounding
	R 2/11	4C Savings Plans and Investments
5	M 2/15	4D Loan Payments, Credit Cards, and Mortgages
	T 2/16	
	W 2/17	5A Fundaments of Statistics
	R 2/18	5B Should You Believe a Statistical Study?
6	M 2/22	5C Statistical Tables and Graphs
	T 2/23	LAB: GRAPHS
	W 2/24	5D Graphics in the Media
	R 2/25	5E Correlation and Causation
7	M 3/1	
	T 3/2	
	W 3/3	**Test 2**
	R 3/4	6A Characterizing Data
	3/8 - 3/12	SPRING BREAK
8	M 3/15	6B Measures of Variation
	T 3/16	6C The Normal Distribution
	W 3/17	
	R 3/18	6D Statistical Inference
9	M 3/22	
	T 3/23	7A Fundamentals of Probability
	W 3/24	
	R 3/25	7B Combining Probabilities
11	M 3/29	7C The Law of Large Numbers
	T 3/30	7D Assessing Risk
	W 3/31	7E Counting and Probability
	4/1 - 4/5	EASTER BREAK
12	T 4/6	
	W 4/7	
	R 4/8	**Test 3**

13	M 4/12	11A Mathematics and Music
	T 4/13	11B Symmetry
	W 4/14	11C Proportion and the Golden Ratio
	R 4/15	
14	M 4/19	13A Network Analysis
	T 4/20	
	W 4/21	13B The Traveling Salesman Problem
	R 4/22	
15	M 4/26	12A Voting: Does the Majority Always Rule?
	T 4/27	
	W 4/28	12B Theory of Voting
	R 4/29	
16	M 5/3	**Presentations**
	T 5/4	**Presentations**
	W 5/5	
	R 5/6	